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EPA Proposes Plan

The United States Environmental Protection Agency (EPA) has completed an evaluation of various alternatives for the remediation of the ground water and surface water contamination in the Galena, Kansas, area. The potential remedial alternatives that were evaluated are described in a draft report entitled, **Groundwater and Surface Water Operable Unit Feasibility Study.**

Based on a thorough evaluation of available data, the EPA and the Kansas Department of Health and Environment (KDHE) have developed a proposed remedial plan that consists of the following four actions:

- Removal and treatment of the surface mine wastes;
- Diversion of surface streams;
- Recontouring of land surface;
- Remediation of deep aquifer wells.

The EPA will hold a public meeting to explain the Proposed Plan and feasibility study. The public meeting will be held on Feb. 24, 1988, at 7 p.m. at the Galena Senior Citizens Center, 720 Wall Street, Galena, Kansas.

The draft Operable Unit Feasibility Study report will be available after March 6, 1988, for public review at the Galena Public Library and the EPA, Region VII, Library. Comments on the report or the Proposed Plan should be sent to Alice Fuerst, EPA, Region VII, 726 Minnesota Ave., Kansas City, Kan. 66101. Comments must be received by April 6, 1988. A decision regarding implementation of the Proposed Plan will be made after consideration of comments from the public.

In 1983, the EPA added a 110-square mile portion of Cherokee County, Kan., to the National Priorities List (NPL) because of risks posed to human health and the environment by abandoned lead-zinc mines. The EPA divided the Cherokee County Site into six subsites for investigation and remediation. Galena, the objective of this study, is one of the subsites. It consists of an 18-square mile area in the east-central portion of the Cherokee County Site.

The EPA performed a remedial investigation at the Galena subsite to determine the nature and magnitude of problems at the subsite. One of the study's findings was that metallic compounds containing lead, cadmium, zinc and other contaminants were being released into surface streams and the shallow ground water. These releases pose a threat to the environment and may pose a health hazard for people who use shallow wells.

Based on the evaluation, the EPA and the Kansas Department of Health and Environment (KDHE) have developed a preferred remedial action alternative that consists of the following four parts:

1) The surface mine wastes will be removed and treated, through milling and flotation, to remove the lead and zinc. This action will reduce the human exposure to the contaminants in the surface wastes and the migration of those contaminants to the ground water and streams. The metals removed from the wastes will be sold to help defray a portion of

the costs. The tailings remaining after the removal of the metals will be disposed of in the mine voids.

2) Surface drainage will be diverted around specific areas to prevent stream capture by mine shafts and subsidences. The planned diversions include re-establishing the Tributary A stream bed through Hells Half Acre via a lined channel and channelizing Owl Branch in the Blue Hole area. Lined channels will eliminate surface water recharge to the ground water system. A portion ofOwl Branch will be diverted to Tributary C to reduce surface water flow through the mined areas. This basin is a primary contributor to the metals loading in Short Creek.

3) To reduce surface water ponding and infiltration to the subsurface mineral zones, the surface will be recontoured. The EPa is exploring the use of vegetation to stabilize the soils and control erosion of the recontoured surface.

4) Wells penetrating the Roubidoux aquifer will be examined. Abandoned wells will be plugged. Operating wells will be lined if remediation is necessary. This action will be taken to protect the Roubidoux aquifer from contaminant migration from the shallow aquifer.

The capital costs associated with the preferred alternative are estimated to be $5,800,000. This is an order of magnitude (+50 percent to -30 percent)

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estimate. The estimated annu operation and maintenance the alternative will be $10,000.

The preferred alternative is modification of the remedial a tions described in the operab unit feasibility study report. Th alternative was selected becau the combined actions of remo ing the surface wastes, contai ing and diverting the surfac streams and recontouring wi reduce the metals concentra tions and the metals loading i the strams. These actions als will have some beneficial impac on the ground water quality. Remediation of deep aquifer wells is included in the alternative to protect the good quality regional aquifer from contaminants in the shallow aquifer. This alternative is very similar to Alternative 3 although it does not include partial backfilling of the mine voids. The effectiveness of such an action is questionable and, therefore, is not prefered by EPA and KDHE.

During the evaluation of remedial alternatives, different methods were examined to control the sources of the contaminants and to control the migration of the contaminants. Initially, twelve alternatives were examined and screened based on their general effectiveness, implementability and costs. Five of the twelve alternatives were selected for detailed evaluation. These alternatives ranged from no action to treating all the surface wastes to treating the ground water and surface water. The five alternatives evaluated in detail are described below.

Alternative 2: .Remove and treat surface mine wastes. .Backfill mine shafts and void space .Recontour land surface .Remediate deep wells.

Alternative 3: .Remove and treat surface mine wastes .Partially backfill mine shafts and voids .Divert surface streams .Recontour land surface .Remediate deep wells.

Alternative 5: .Remove and contain surface mine wastes .Divert surface streams .Recontour land surface .Remediate deep wells.

Alternative 10: Pump and treat ground water .Treat surface water via wetlands .Divert surface streams .Recontour land surface .Remediate deep wells.

Alternative 12: .No action.

The Superfind law emphasizes the importance of public input on EPa actions at Superfund sites. A final decision on this remedy will not be made until all interested members of the community have had an opportunity to review and comment on the proposed plan, and the operable unit feasibility study (OUFS) report. A four-week public comment period is open from March 7, 1988, to April 6, 1988. Written comments should be submitted to:

Ms. Alice Fuerst
U.S. Environmental Portection Agency
Superfund Branch
726 Minnestoa Ave.
Kansas City, Kansas 66101

The OUFS report will be available for review after March 6 at the Galena City Library, 315 W. Seventh, Galena, Kan.; and the EPA Library at the EPA office, 726 Minnesota Ave., Kansas City, Kan. The Administrative REcord is also available for review at the two libraries.

Alternative Water Supply.....

EPA Decides on Action

In December, 1987, the EPA made a decision on supplying an alternative water supply to approximately 1,500 people outside the Galena Municipal Water Supply System Service area who are dependent on the shallow wells for drinking water. The selected remedial alternative will include the following actions:

- The alternative water supply will be provided by the Galena Municipal Water System.
- Existing City of Galena deep aquifer wells will be rehabilitated or a new well consltructed to meet the increased water demand.
- A distribution system will be installed to service the residents within the area between Galena and the Spring River, including the Lowell area.

The KDHE is assisting a steering committee of residents in developing an entity to manage the distribution of water to the residents. For further information on the steering committee, you should contact Mr. Rex Heape, Kansas Department of Health and Environment, 1500 W. Seventh, Chanute, Kan. 66720 or at 316-431-2390.